forming first and second trenches in the epitaxial layer that extend vertically from the upper surface to define a mesa, the first and second sections comprising a drift region of the mesa;

forming first and second field plate members in the first and second trenches, respectively, the first and second field plate members being formed of a conductive material fully insulated from the mesa by a dielectric material;

forming source and body regions in an upper portion of the mesa, the source region being of the first conductivity type and the body region being of a second conductivity type opposite to the first conductivity type, the body region separating the source from the first section of the drift region;

forming a gate embedded within the dielectric material adjacent the body region.

2. The method of claim **1** further comprising:

forming a source electrode connected to the source region and to the first and second field plates; and

forming a drain electrode connected to the substrate.

3. The method of claim **1** wherein the first conductivity type comprises n-type and the second conductivity type comprises p-type.

4. The method of claim **1** wherein the forming of first and second field plate members comprises:

forming a layer of the dielectric material in each of the first and second trenches, the layer partially filling each of the trenches and covering first and second sidewall portions of the first and second trenches, respectively; and

filling a remaining portion of the first and second trenches with the conductive material.

5. The method of claim **1** wherein the dielectric material comprises silicon dioxide.

6. The method of claim **1** wherein the conductive material comprises doped polysilicon.

7. A method of fabricating high-voltage transistor comprising:

forming an epitaxial layer with a doping concentration gradient that varies in a substantially continuous manner in a vertical direction through a lower portion of the epitaxial layer, the doping concentration gradient in the lower portion increasing with distance from an upper surface of the epitaxial layer, the doping concentration gradient differing by at least 10 % from near a top of the lower portion to near a bottom of the lower portion;

forming first and second trenches in the epitaxial layer that extend vertically from the upper surface to define a mesa, the lower portion comprising a drift region of the mesa;

forming first and second field plate members in the first and second trenches, respectively, the first and second field plate members being formed of a conductive material fully insulated from the mesa by a dielectric material.

8. The method of claim **7** wherein the epitaxial layer is formed with a first conductivity type.

9. The method of claim **8** further comprising:

forming source and body regions in an upper portion of the mesa, the source region being of the first conductivity type and the body region being of a second conductivity type opposite to the first conductivity type, the body region separating the source from the lower portion of the drift region.

10. The method of claim **7** further comprising:

forming a gate embedded within the dielectric material adjacent the body region.

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